TRUTH LAB 001

Mobile Link Bonding Comparison

A controlled evaluation of Peplink SpeedFusion and Dejero Smart Blending Technology™

TECHNICAL WHITE PAPER

Testing conducted December 1–8, 2025

IP Access International

Executive Summary

This white paper evaluates foundational performance differences between two technologies commonly used for mobile link bonding: Peplink SpeedFusion and Dejero Smart Blending Technology™. Testing focused on network overhead, use of available bandwidth, and connectivity during a complete link failure.

In the tested capacity configurations, Dejero SBT utilized a greater average share of available bandwidth. The link failure results also showed that Peplink's detection setting materially affected both interruption duration and idle overhead. These results should be evaluated together because a more aggressive detection setting can improve continuity while increasing background data use.

Key Findings

Measure	Dejero SBT	Peplink SpeedFusion
Average available bandwidth utilized	94.83%	87.3%
Daily idle overhead with two links	65 MB	46–364 MB, depending on setting
Persistent TCP interruption	0 seconds	24 seconds default; 0 seconds Extreme

Dejero's average utilization was 7.53 percentage points higher in the tested configurations. Peplink Extreme substantially reduced measured interruptions compared with its default setting, while increasing daily idle overhead from 46 MB to 364 MB.

Test Environment

The test environment was designed to minimize variability between devices and test runs. Cellular connectivity was disabled on both edge devices. Each device received the same connectivity over Gigabit Ethernet. Initial tests used unrestricted 1 Gbps access, while bandwidth-limited tests used Linux Traffic Control to rate-limit access.

The Dejero GateWay M6E6 and Peplink BR2 Pro 5G were selected because both are commonly deployed in mobility applications. For hub reassembly, Dejero Concentrator and Peplink FusionHub were installed on a virtualization hypervisor with 10 Gigabit access to the test network. CPU utilization was monitored throughout testing to ensure processing limits did not artificially affect the results.

For the controlled overhead and throughput tests, data remained within the lab network to prevent Internet instability from influencing the results. The link failure scenarios used one terrestrial fiber connection and one Low Earth Orbit satellite connection. Only standard, documented settings were used; advanced features and hidden menus were not used.

Platform	Edge Device	Hub Software	Reported Release
Dejero	GateWay M6E6	Concentrator	3.12; link failure tests specify 3.12.2
Peplink	BR2 Pro 5G	FusionHub	8.5.3

Overhead Evaluation

Link bonding introduces overhead by distributing data across multiple connections and reassembling it so ordinary network applications can use the resulting connection. This evaluation separates overhead into three categories.

Idle link overhead. Bandwidth used to maintain connectivity even when no client data is traversing the network.

Data transfer overhead. Additional data transmitted over the underlying WAN links relative to the client data entering the solution.

Available bandwidth utilization. Achievable throughput through the solution compared with the combined available capacity of its links.

Idle Link Overhead

No client devices were connected during this test, and the LAN environment on each edge device was physically disconnected. Dejero SBT does not provide a user-adjustable setting for the aggressiveness of link failure detection, so one Dejero configuration was tested.

Peplink SpeedFusion provides four Link Failure Detection Time settings. Peplink notes that shorter detection times require more health checks and result in greater bandwidth overhead.

Platform and Setting	Detection Setting	Daily Overhead
Dejero SBT	No user-adjustable setting	65 MB
Peplink Recommended	Approximately 15 seconds	46 MB
Peplink Fast	Approximately 6 seconds	72 MB
Peplink Faster	Approximately 2 seconds	170 MB
Peplink Extreme	Under 1 second	364 MB

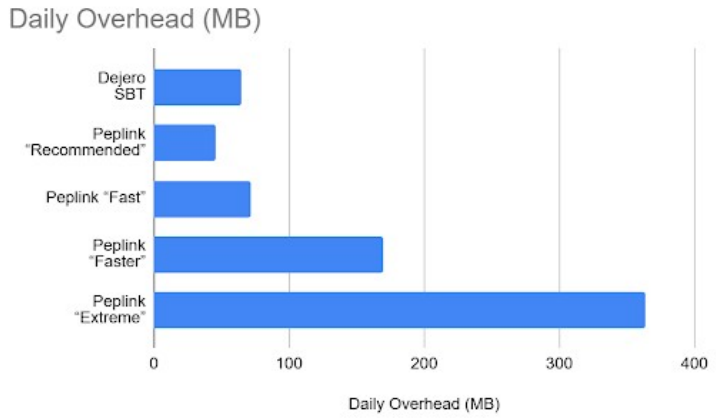

Figure 1. Daily Idle Overhead. Measured idle data use per day with two WAN links, by platform and detection setting.

Dejero SBT's daily overhead was greater than Peplink Recommended and lower than Peplink Fast. The operational significance of this tradeoff becomes clearer when compared with the link failure handling results.

Data Transfer Overhead

Data transfer overhead measures the extra data transmitted over the WAN links. For example, transmitting 1.25 GB over the WAN to transfer a 1 GB file represents 0.25 GB, or 25 percent, overhead.

Using iperf3, 10 GB of TCP data was uploaded, followed by a 10 GB download. This sequence was repeated twice on each platform. Overhead was calculated from the difference between bytes entering the LAN port and total bytes exiting the WAN ports, with the measurements averaged to produce an overhead percentage.

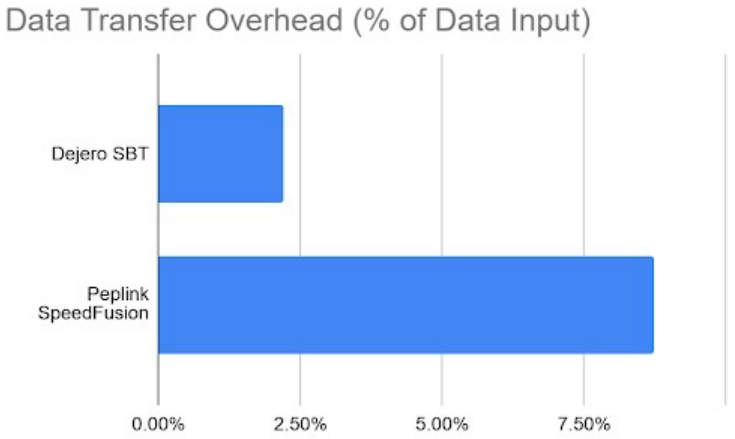

Figure 2. Data Transfer Overhead. Additional WAN traffic relative to client data input during the TCP transfer tests.

Performance Evaluation

Maximum Throughput Test

With two unrestricted 1 Gbps WAN links, iperf3 was used with default TCP settings to measure achievable throughput. Neither technology exceeded 1 Gbps in this configuration. These findings represent the maximum throughput observed with the tested devices, configuration, and large TCP packets; they do not establish a universal throughput limit for either technology.

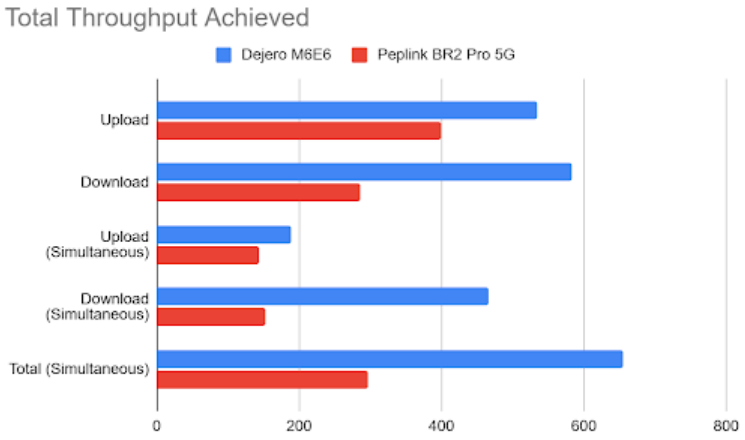

Figure 3. Total Throughput Achieved. Upload, download, and simultaneous transfer results for the tested devices.

Available Bandwidth Utilization

Testing continued across several link capacities with combined totals closer to the practical throughput capability of the devices. Results were averaged to determine how much available link capacity each platform utilized.

Technology	Average Available Bandwidth Utilized
Dejero Smart Blending Technology	94.83%
Peplink SpeedFusion	87.3%

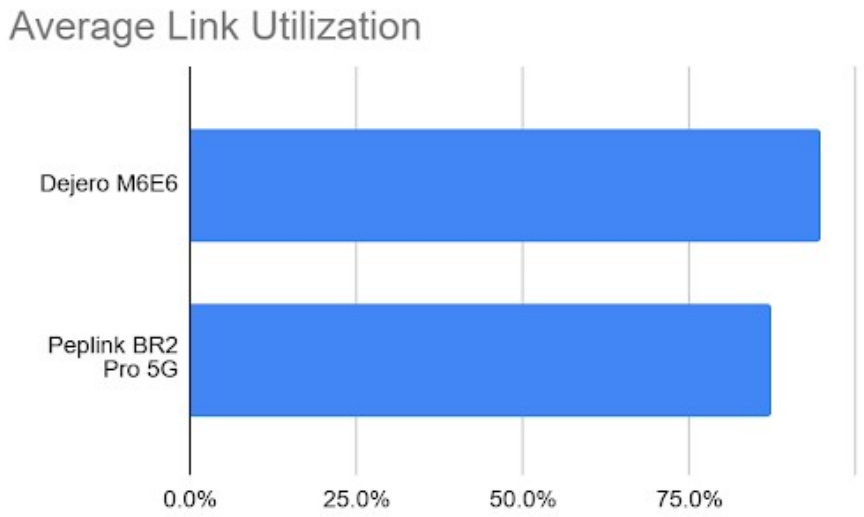

Figure 4. Average Link Utilization. Average share of combined WAN capacity used across the tested configurations.

Dejero SBT utilized an average of 7.53 percentage points more available bandwidth than Peplink SpeedFusion in the tested configurations.

Link Failure Handling

This portion of the evaluation measured the effect of a complete link failure on connectivity delivered through each solution. The methods were intentionally sensitive to brief interruptions. In practical applications, the effect may be less noticeable depending on the application and traffic type.

Test Procedure

- Persistent TCP: A persistent socket transmitted data every 100 milliseconds and measured round-trip time.
- ICMP ping: A ping was generated every 100 milliseconds, measuring round-trip time and connection status with a 200-millisecond timeout.
- Continuous fping: Continuous probing used a 10-millisecond interval and a 200-millisecond timeout.

After both WAN connections were established and stabilized, the terrestrial fiber connection was interrupted by disassociating its VLAN. This prevented the devices from detecting a physical link-down condition such as a disconnected cable. Interruption duration was calculated from the period during which each method received no returned data.

Configurations Evaluated

PEPLINK SPEEDFUSION DEFAULT

Peplink BR2 Pro 5G and FusionHub, both version 8.5.3. The two WAN connections were terrestrial fiber and LEO satellite. Cellular modems and Wi-Fi as WAN were disabled. SpeedFusion used default settings, both connections had the same priority, and both links were verified as active before testing.

PEPLINK SPEEDFUSION EXTREME

The same Peplink configuration was used, with Link Failure Detection Time changed to Extreme, or under one second.

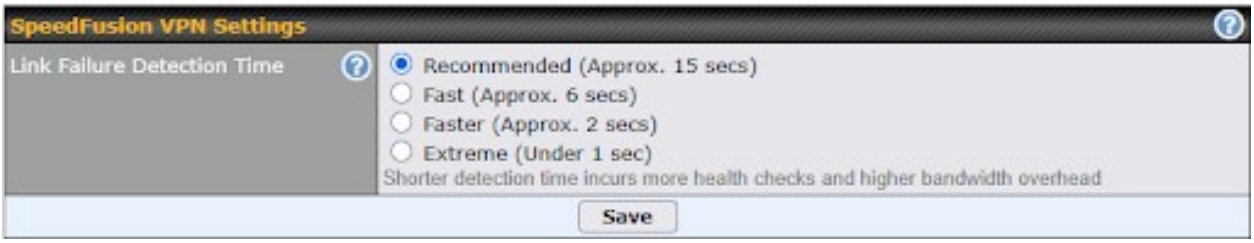

Figure 5. SpeedFusion VPN Settings. The Link Failure Detection Time control. The supplied screenshot shows Recommended selected; Extreme was selected for the Extreme test.

DEJERO SMART BLENDING TECHNOLOGY

Dejero GateWay M6E6 and Concentrator, both version 3.12.2. The two WAN connections were terrestrial fiber and LEO satellite. Cellular modems were disabled and blending used default settings. The concentrator's physical and logical position matched the Peplink test scenario, and both links were verified as active before testing.

Comparative Results

Test Method	Peplink Default	Peplink Extreme	Dejero SBT
Persistent TCP	24 seconds	0 seconds	0 seconds
ICMP ping	18.6 seconds	1 second	0.42 seconds
Continuous fping	16.5 seconds	0.84 seconds	0.9 seconds

Peplink Extreme substantially reduced measured interruptions compared with the default configuration, while increasing daily idle overhead. Dejero SBT and Peplink Extreme both recorded zero interruption during the persistent TCP test. Dejero recorded the shorter interruption during the ICMP test, while Peplink Extreme recorded a slightly shorter interruption during the continuous fping test.

A recorded value of zero means no interruption was measured by that test method. It does not establish that no packet loss or disruption could occur under other conditions.

Conclusion

Within the tested capacity configurations, Dejero Smart Blending Technology utilized a greater average percentage of available bandwidth than Peplink SpeedFusion. The link failure tests also showed that Peplink's detection setting had a significant effect on both interruption duration and idle bandwidth overhead. The default and Extreme configurations should therefore be evaluated separately when comparing platform behavior.

For applications where connectivity continuity is critical, interruption performance should be considered alongside the bandwidth required to monitor and maintain each link.

Scope and Limitations

These findings apply specifically to the devices, software releases, settings, and network conditions described in this paper. Cellular modems were disabled, so this evaluation does not establish comparative performance across live cellular networks. Results may differ with other hardware, software releases, traffic patterns, configurations, and network conditions.